

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A process for the preparation of ~~polydienes-a~~
polydiene which comprises the polymerization of a conjugated ~~dienes-diene~~ in the presence
of a catalytic system which essentially consists in components (a) to (d), wherein:

component (a): compound containing a rare-earth element having an atomic number
from 57 to 71 in the Periodic Table, or a product obtained by reacting the above compound
with a Lewis base;

component (b): an organo aluminum derivative containing at least one halogen atom;

component (c): an alumoxane;

component (d): an organometallic compound of aluminum represented by general
formula (I) $AlR_1R_2R_3$

wherein R_1 and R_2 , the same or different, are hydrocarbyl groups having from 1 to 10
~~Carbon-carbon~~ atoms or hydrogen, and R_3 is a hydrocarbyl group having from 1 to 10 ~~Carbon~~
carbon atoms; the above process being characterized in that it is effected under operating
conditions selected from:

(i) essentially isothermal conditions at a temperature ranging from 70°C to 140°C;

(ii) essentially adiabatic conditions with an initial temperature ranging from 50°C to
90°C and a final temperature ranging from 100°C to 150°C;

the above process being continued under conditions (i) or (ii) until a polydiene is
obtained, having branching index values (measured with the GPC-MALLS technique) lower
than 0.90 and a parameter values (also measured with the GPC-MALLS technique) ranging
from 0.53 to 0.30.

Claim 2 (Currently Amended): The process according to claim 1, wherein the polymerization is effected under isothermal conditions (i) and is carried out at a temperature ranging from 80°C to 120°C.

Claim 3 (Currently Amended): The process according to claim 1, wherein the polydiene is at least one selected from the group consisting of polybutadiene and polyisoprene.

Claim 4 (Original): The process according to claim 3, wherein the polybutadiene has a 1,2 content lower than 2%.

Claim 5 (Original): The process according to claim 1, wherein component (a) is a compound containing neodymium.

Claim 6 (Original): The process according to claim 1, wherein component (b) is an organo aluminum derivative containing at least one chlorine atom.

Claim 7 (Original): The process according to claim 1, wherein the molar ratio (a)/(b) ranges from 1/0.1 to 1/15, the molar ratio (a)/(c) ranges from 1/1 to 1/5,000, the molar ratio (a)/(d) ranges from 1/1 to 1/500, the molar ratio (c)/(d) ranges from 1/0.02 to 1/300.

Claim 8 (Original): The process according to claim 7, wherein the molar ratio between component (a) and component (b) ranges from 1/0.5 to 1/5,
the molar ratio (a)/(c) ranges from 1/3 to 1/1,000,
the molar ratio (a)/(d) ranges from 1/10 to 1/300,

the molar ratio (c)/(d) ranges from 1/0.05 to 1/250.

Claim 9 (Original): The process according to claim 1, wherein component (a) is used in a quantity ranging from 0.0001 to 1.0 mmoles per 100 grams of conjugated diene to be polymerized.

Claim 10 (New): The process according to claim 1, wherein the polymerization is effected under essentially adiabatic conditions (ii) with an initial temperature ranging from 50°C to 90°C and a final temperature ranging from 100°C to 150°C.